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Ship Resource Simulation Model

Maritime Platforms Division
DSTO

Development History

- Developed by the Offshore Patrol Combatant Project – contracted to Mercadier Pty Ltd
- OPC – Operational Profile Database
- Mission Manpower Model
- MPD – Ported to PC
  - MapInfo GIS
  - Access database
  - Renamed to SRSM
- Requirements workshop conducted with stakeholders – Dec 1999

Modelling Ships Complement

- MPD investigating two approaches
  - Ship Resource Simulation Model
    - Scheduling model
  - Micro Saint (with COM services)
    - Discrete event stepped simulation of task networks

Ship Resource Simulation Model

- Operational Profile Database
  - missions, activities, tasks
- Electronic model of platform
- Geographic Information System
  - Mission planning
  - platform description
- Based on Offshore Patrol Combatant MPD
  - ported to PC
  - interface enhancements
  - DWPE study/Patrol Boat Study

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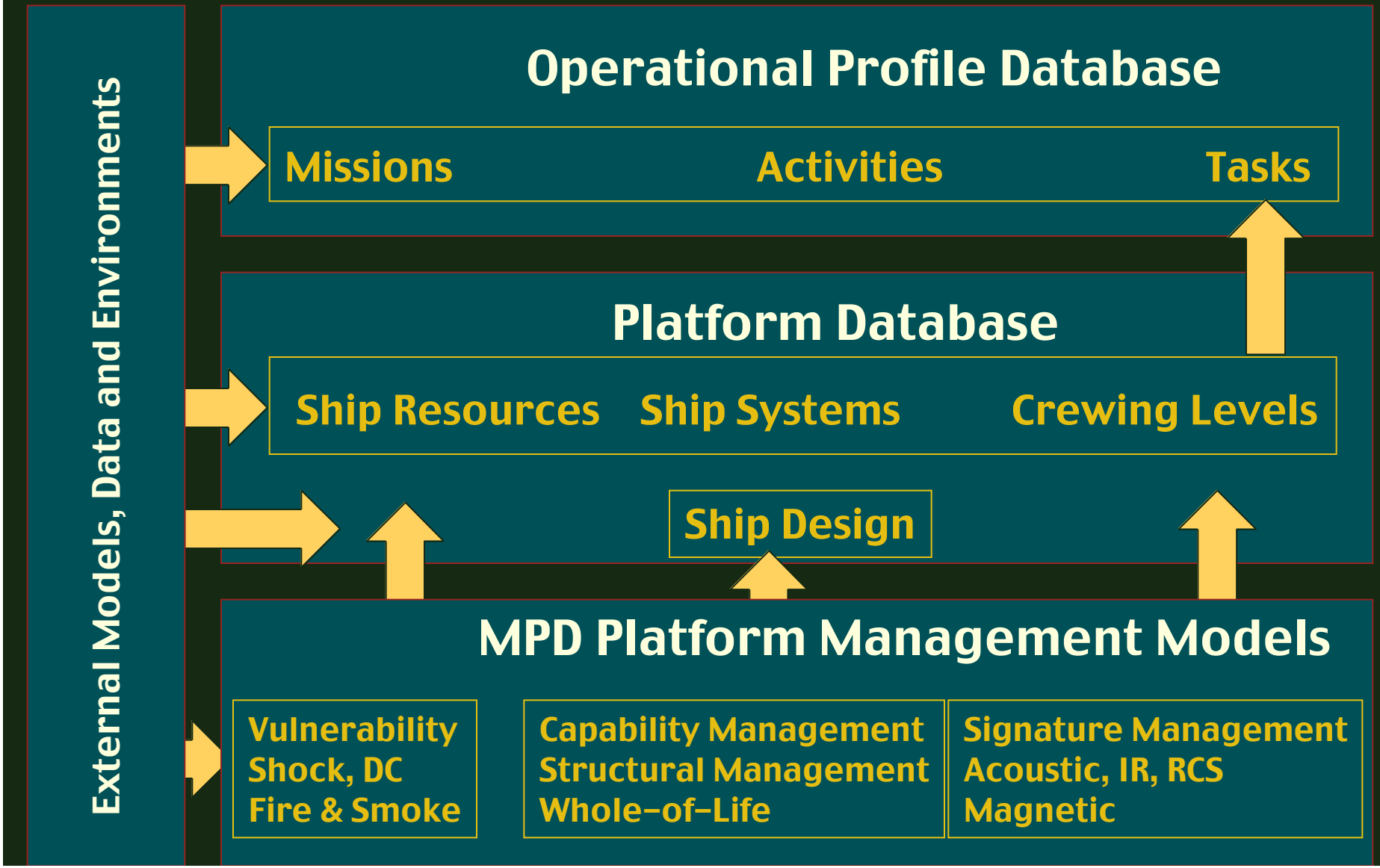
The MPD/Mercadier Ship Resource Simulation Model



Force Element Organisation

- The Force Element has a list of potential missions
- Each mission contains a list of serials
- Each serial is described by a state and environment
- Each serial contains a list of activities
- Each activity contains a list of primary tasks
- The model operates at the level of primary task. This is to say that it schedules each primary task in turn.
- Each primary task contains a list of skills (called enabling tasks)

- Each primary task can have crew assigned. These normally come from a suggested list based on the enabling tasks (skills) but can also be directly assigned.
- Each enabling task (skill) contains a list of resources and systems needed (consumable and other).
- Primary tasks can be a continuous task or a delta task

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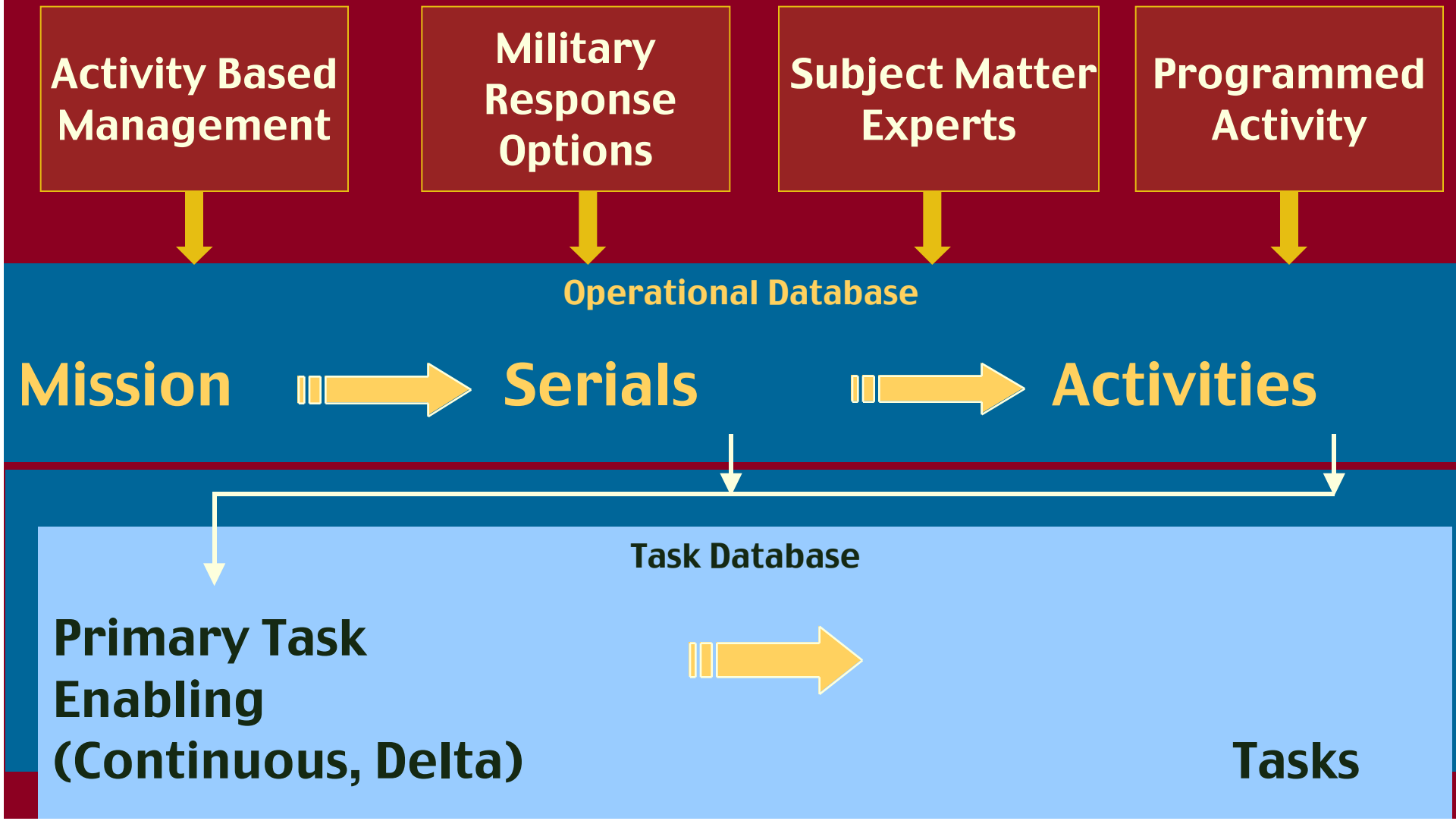
Ship Resource Simulation Model



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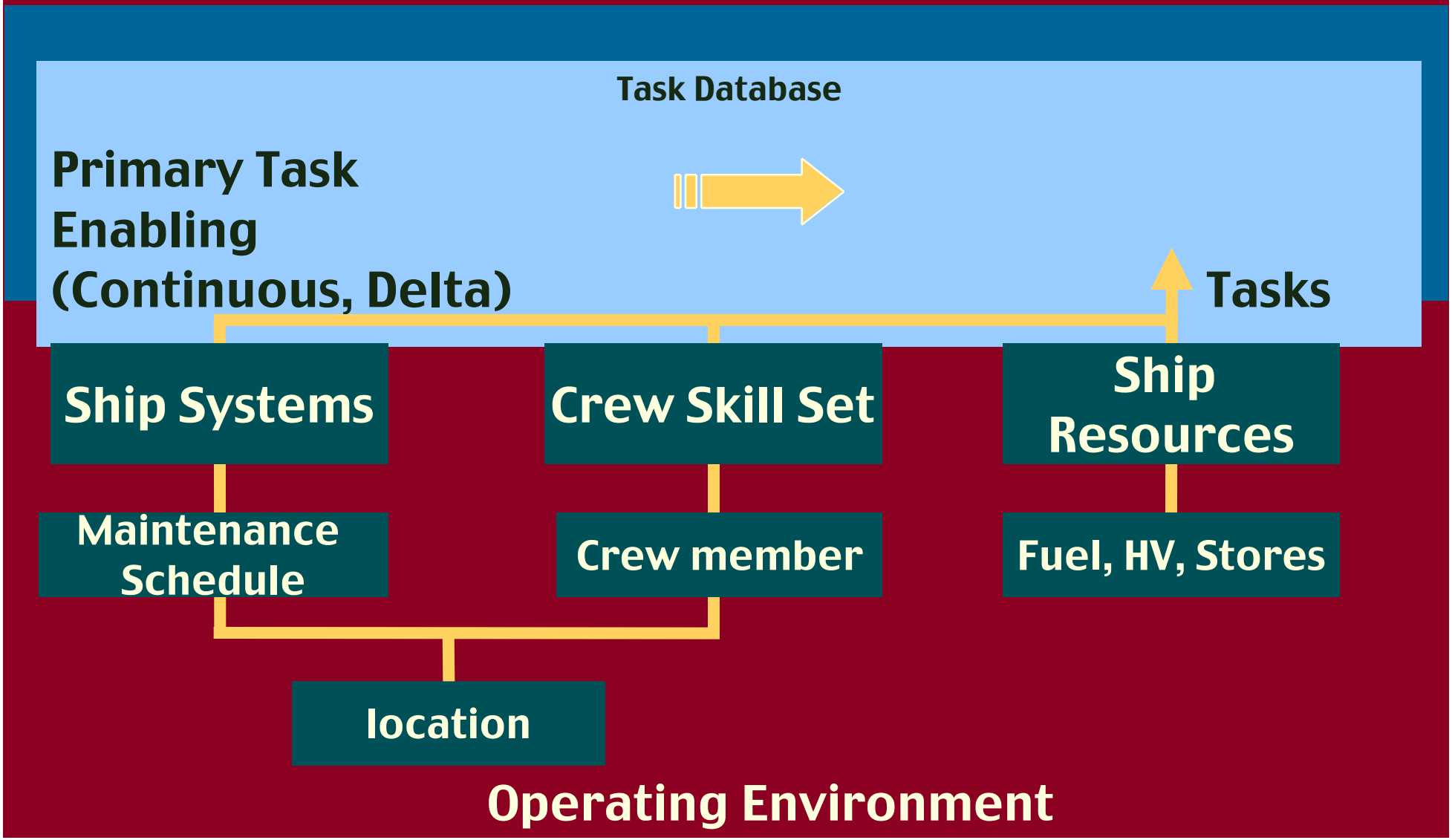
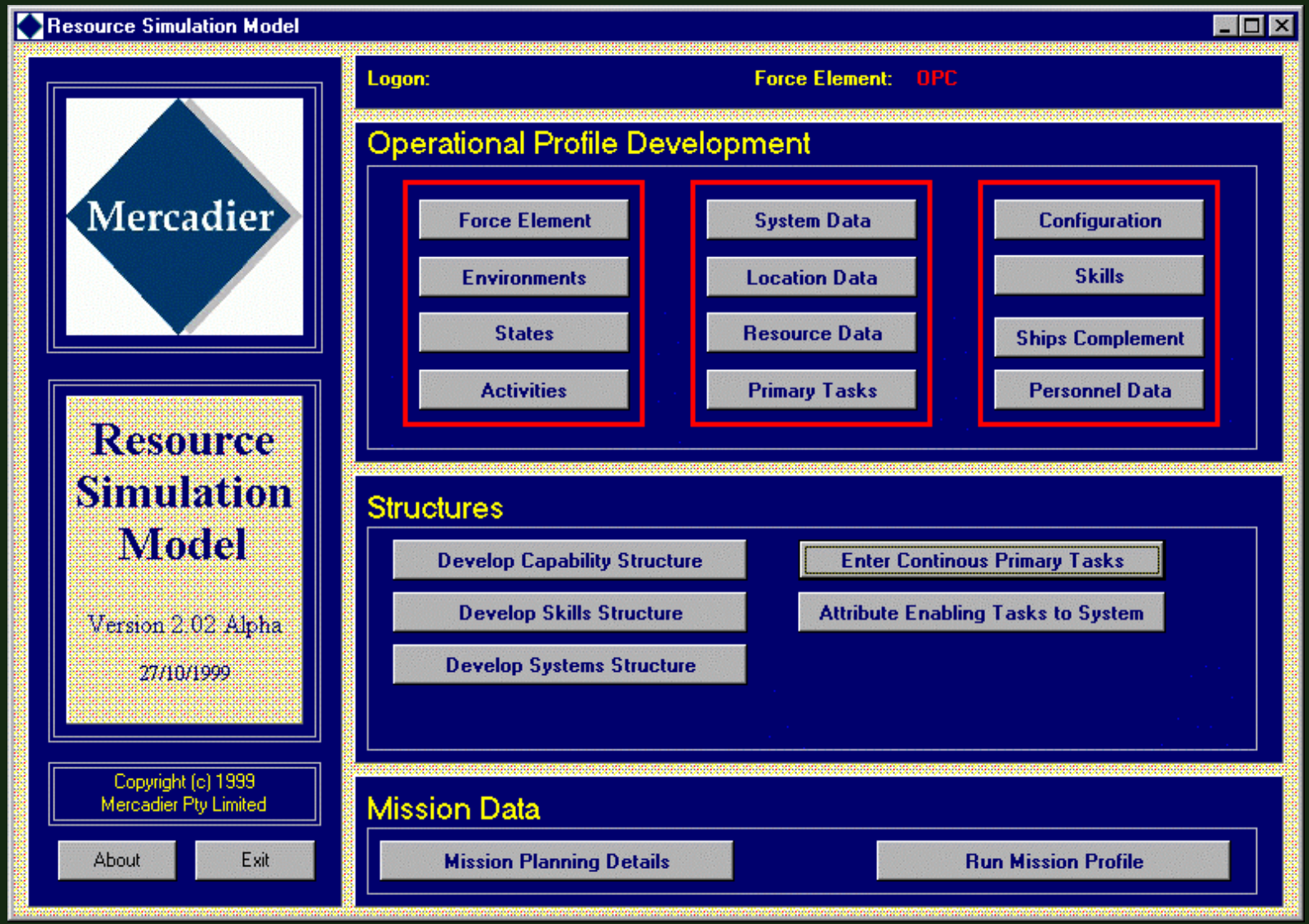
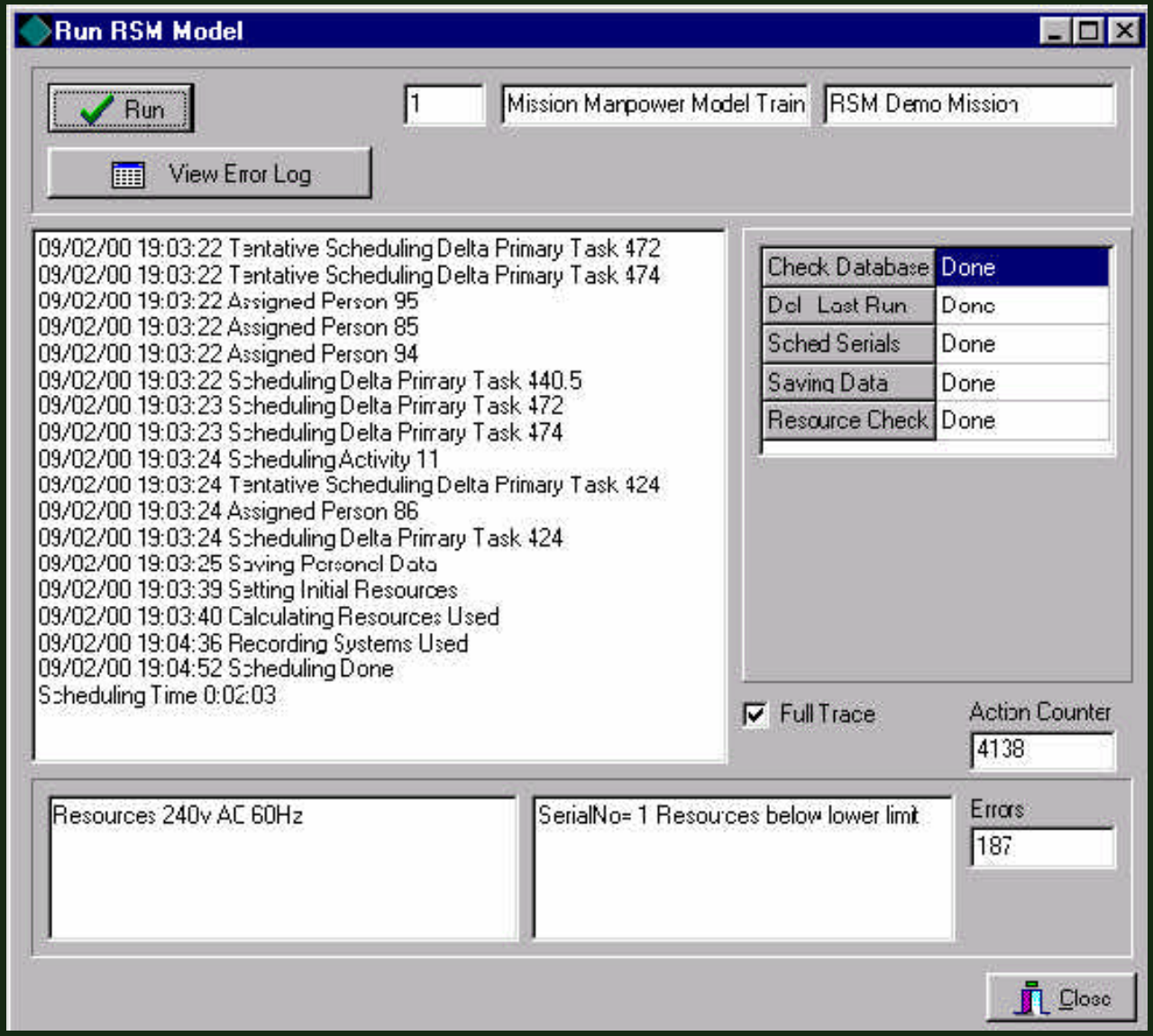
Ship Resource Simulation Model



Initial Screen



Running a Mission



Applications of the Platform Model

- Preparedness modelling
  - readiness and sustainability based on programmed activity
- Optimum manning
- Damage control modelling
- Whole of Life management
- Damage Control Modelling
- Resource usage
- Future personnel profile
- Future training requirements

Summary

- Model successfully ported to the PC
  - still some bugs
- Available for evaluation by HUM TP9
- Evaluated in the Replacement Patrol Boat Project